

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

The specification has been amended to correct minor typographical and grammatical errors, as well as to address some of the objections to the drawings that are made in numbered paragraphs 2), 3), and 4) of the Office Action. No new matter has been added.

No claims are currently being cancelled.

Claims 1, 4, 5 and 8 are currently being amended.

No claims are currently being added.

This amendment amends claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-8 are now pending in this application.

In the Office Action, the title of the invention was objected to as not being descriptive. A new, more descriptive title is being submitted herewith.

In the Office Action, the drawings were objected to for the reasons set forth in numbered paragraphs 2), 3) and 4) of the Office Action. Due to the amendments made to the drawings and to the specification, these objections have been overcome.

In the Office Action, claim 5 was objected to for the reasons set forth in numbered paragraph 5) of the Office Action. Due to the amendment made to claim 5, this rejection has been overcome.

In the Office Action, claims 4 and 8 were rejected under § 112, second paragraph, for the reasons set forth in numbered paragraphs 7) and 8) of the Office Action. Claims 4 and 8 have each been amended to recite a rotation

conversion instead of a mirror image conversion, and thus the this rejection has been overcome due to the amendments made to claims 4 and 8.

In the Office Action, claims 1 and 4 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,461,459 to Muramatsu; and claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Muramatsu in view of U.S. Patent No. 5,649,033 to Morikawa. These rejections are traversed with respect to the presently pending claims, for at least the reasons given below.

The present invention, according to presently pending independent claims 1 and 5, is directed to an image forming apparatus for scanning images on first and second originals each having a main scan direction and a sub-scan direction and forming copy images of the scanning images on an obverse side and a reverse side of an image formation medium. The image forming apparatus sets directions of scanning of the first and second originals to one of an automatic of a horizontally positioned original, an automatic of a vertically positioned original, a portrait of a horizontally positioned original, a landscape of a vertically positioned original, a landscape of a horizontally positioned original, and a portrait of a vertically positioned original. The image forming apparatus determines disposing a binding axis in a longitudinal direction if the automatic of the vertically positioned original, the portrait of the vertically positioned original or the portrait of the horizontally positioned original is set, and the image forming apparatus determines disposing the binding axis in a transverse direction if the automatic of the horizontally positioned original, the landscape of the horizontally positioned original or the landscape of the vertically positioned original is set. The image forming apparatus also scans the first original conveyed in the set direction of scanning of the original, records image data of the scanned first original by subjecting the image data to a rotation conversion, reads out the recorded image data of the first original without rotating the image data. The image forming apparatus provides the data with a binding margin having a width in the transverse direction on the basis of the binding axis if the determined binding axis is disposed in the longitudinal direction, or it provides a

binding margin having a width in the longitudinal direction on the basis of the binding axis if the determined binding axis is disposed in the transverse direction, in which the reading is controlled such that a position of the binding margin on the obverse side is reversed to a position of the binding margin on the reverse side. The image forming apparatus also forms the read image data of the first original on the obverse side of the image formation medium, scans the second original conveyed in the set direction of scanning of the original, records image data of the scanned second original by subjecting the image data to a rotation conversion, reads out the recorded image data of the second original by rotating the image data by 180° if the directions of scanning of the first and second originals are the portrait of the horizontally positioned original or the landscape of the vertically positioned original, or without rotating the image data if the directions of scanning of the first and second originals are the landscape of the horizontally positioned original, the portrait of the vertically positioned original, the automatic of the horizontally positioned original, or the automatic of the vertically positioned original. The image forming apparatus provides the data with the binding margin having the width in the transverse direction on the basis of the binding axis if the determined binding axis is disposed in the longitudinal direction, or it provides the binding margin having the width in the longitudinal direction on the basis of the binding axis if the determined binding axis is disposed in the transverse direction, in which the reading is controlled such that a position of the binding margin on the obverse side is reversed to a position of the binding margin on the reverse side; and forming the read image data of the second original on the reverse side of the image formation medium.

Thereby, when a duplex printing on one copy paper from two originals is performed, it is possible to perform printing in consideration of image directions of the originals and the position of the binding margin. Thus, it is possible to perform printing of images aligned with the image direction in both cases of portrait and landscape direction and the position of the binding margin, for the originals which can only be horizontally positioned due to the structure of a copying machine.

Further, even if the originals can be vertically and horizontally positioned, the originals can be placed (set for input) in the direction of paper set in the apparatus and the image direction is set, and thereby printing aligned with the image direction and the position of the binding margin is possible.

Turning now to the cited art of record, Muramatsu discloses a digital copying apparatus comprising: input means for inputting a position of a binding margin to be provided on a copy sheet as a relative position in relation to an original image; detection means for detecting an orientation of the original paper and an orientation of the original image based on image data generated by reading the original image; detection means for detecting an orientation of the copy sheet; and control means for controlling formation of the copy image based on the orientations of the original paper and the original image and the orientation of the copy sheet so as to provide a binding margin at the relative position in relation to the copy image.

Specifically, in Muramatsu, even if the binding margin is designated without consideration of the setting direction and setting position of the original and the vertical orientation of the image, the binding margin can be formed in a desired position of copy sheet. To achieve it, the position (orientation) of the binding margin is designated as a relative position (orientation) in relation to the original image, not as a relative position (orientation) in relation to the original document on the original table, and the binding margin is provided in the same relative position (orientation) in relation to the copy image.

Specifically, if a binding margin is designated in one of the right end, left end, upper end and lower end of the original image, the copy operation is controlled such that the binding margin is provided in the same position of the copy sheet (designated position of one of the right end, left end, upper end and lower end of the copy image).

Therefore, with Muramatsu's apparatus, it is possible to provide a binding margin in a desired position on copy sheet, regardless of the setting direction and setting position of the original, and the vertical orientation of the original

image. Thus, in the case where the originals are automatically fed by an original feeding device such as an ADF, even if the orientations of the originals and the vertical orientations of the original images are different from one another, a binding margin can be formed in a desired aligned position of each copy sheet.

Morikawa discloses an image processing apparatus in which, even if a duplex original is vertically positioned and original images thereof are outputted on one sides of outputs, such as copy papers, the vertical orientations of all the output images are unified in one orientation.

When the present invention is compared with each of the two cited references, the cited references are very much different in their technical idea and in their structure as compared to the image forming apparatus of the presently claimed invention.

When the presently claimed invention is compared with the cited references, the cited references do not disclose at all the technical idea and the structure of the presently claimed invention, whereby some of the claim elements include: setting directions of scanning of the first and second originals to one of an automatic of a horizontally positioned original, an automatic of a vertically positioned original, a portrait of a horizontally positioned original, a landscape of a vertically positioned original, a landscape of a horizontally positioned original, and a portrait of a vertically positioned original; determining disposing a binding axis in a longitudinal direction if the automatic of the vertically positioned original, the portrait of the vertically positioned original or the portrait of the horizontally positioned original is set, and determining disposing the binding axis in a transverse direction if the automatic of the horizontally positioned original, the landscape of the horizontally positioned original or the landscape of the vertically positioned original is set.

Accordingly, for at least the reasons given above, all of the presently pending claims are believed to be patentably distinct from the cited art of record.

Applicant believes that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Also, as a procedural matter, the Examiner is requested to evidence considering the references submitted in an Information Disclosure Statement (IDS) filed on April 14, 2003, by returning an initialed copy of the Form PTO SB/08 submitted with that IDS, in a next correspondence to be sent to Applicant's representative.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

March 29, 2004
Date

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